

recovery performance and good resistance to fluid media.

The discovery of the present invention is an improved molding composition, which is especially useful for the preparation of the interior walls of flexible plastic pipes, which not only exhibit high dimensional stability and good recovery performance, but also good resistance to fluid media, particularly alcoholic media.

The embodiment of the invention as claimed in Claim 14 is directed to a molding composition comprising the following components:

- I. from 40 to 80 parts by weight of a polyamide selected from the group consisting of PA 612, PA 1012, PA 11, PA 12 and PA 1212, and
- II. from 60 to 20 parts by weight of a flexible polymer whose main chains consist of carbon atoms, wherein the amounts of I and II in parts by weight total 100, and wherein the composition comprises not more than 2% by weight of extractables, measured by extracting the granules with hot 100 percent ethanol under reflux conditions, the tensile modulus of elasticity of the composition ranging from 200 to 950 N/mm².

In another embodiment of the invention as claimed in Claim 18, a pipe is claimed whose interior wall structural component is comprised of:

- I. from 40 to 80 parts by weight of a polyamide is selected from the group consisting of PA 46, PA 66, PA 610, PA 1010, PA 612, PA 1012, PA 11, PA 12 or PA 1212, or the amorphous copolyamides PA 6,3-T, blends of polyamides, or the corresponding copolyamides, and
- II. from 60 to 20 parts by weight of a flexible polymer whose main chain consist of carbon atoms, where the amounts of I and II in parts by weight total 100, and

wherein the interior wall component comprises not more than 2% by weight of extractables, measured by extracting the granules with hot 100% ethanol under reflux conditions, the pipe being useful for the piping of aqueous, aqueous-alcoholic or purely alcoholic liquids.

Claim Rejection, 35 U.S.C. §112

Although the Examiner holds that Claim 17 is an improper omnibus claim, Applicants submit to the contrary that it is not, because it clearly states that the subject matter is directed to a method of manufacturing components of screen wash systems and head lamp wash systems of motor vehicles. Further, the method requires that the pipe components of these systems are the pipe of Claim 1, now Claim 18. In other words, the pipe components of the claimed systems are fabricated from the pipe of Claim 18. However, the language of the claim is now believed to have been further clarified by stating, in the step of fabrication, that the pipe components of head lamp wash and screen wash systems are prepared from the pipe of Claim 18. Thus, the method claimed is not "a something substantially as described and shown." Accordingly, the language of the claim is not indefinite and, therefore, the ground of rejection is believed to be without merit. Withdrawal of the rejection is respectfully requested.

Claims 1-10 (Claim 3 has previously been canceled) and 13-16 stand rejected based on 35 U.S.C. §102(b) as anticipated by Yu, U.S. Patent 5,256,460. This ground of rejection is respectfully traversed.

W/D Because Claim 1 has now been canceled, the focus of the rejection is now directed to independent Claim 14. However, it again must be noted that the molding composition of Yu is a two-component system in which component (a) is specifically a copolymer formed by the

copolymerization of ϵ -caprolactam with one of three other copolyamide material forming comonomers. Claim 14, on the other hand, in component (I) specifically excludes a polyamide material containing ϵ -caprolactam as a component, because clearly the claim is limited to five specific polyamides, none of which are ϵ -caprolactam. Accordingly, because Claims 2 and 4-12 now depend on Claim 14 and because Claim 14 is clearly not anticipated by Yu, withdrawal of the anticipatory ground of rejection is respectfully requested.

Claims 1, 2, 4-12 and 14-16 stand rejected based on 35 U.S.C. §103(a) as obvious over Yu, U.S. Patent 5,256,460 in view of Siour et al. '308. This ground of rejection is respectfully traversed.

The Yu reference is traversed for the reasons stated above where it is clear that a key feature of the patent is the preparation of a copolyamide component (a) which is based on ϵ -caprolactam, while the polyamide component of the present molding composition does not contain ϵ -caprolactam.

The deficiencies of Yu are neither overcome nor improved upon by Siour et al.

Applicants submit that just a cursory examination of the two references of the rejection makes it perfectly clear that the can not be properly combined, because, whereas the Yu disclosure discloses that the properties of objects prepared from the disclosed blend of materials of fuel resistance and improved flexibility are entirely dependent on a polyamide component formed from a ϵ -caprolactam monomer component, Siour does not teach or suggest such a dependency. Although indeed, PA-6 is taught as a polyamide, other polyamides are fully equivalent for the purposes of Siour. Accordingly, in order to meet the objectives taught by Yu, one of skill in the art would not be led to incorporate the polyamide of Siour as a substitute for the specific copolyamide set forth in Yu as component (a) in an attempt to arrive at the present

invention. To do so would violate the teachings of Yu in achieving the specific objective sought after by Yu. Moreover, Siour contains no teaching or suggestion of the important limitations in Claim 14 regarding the tensile modulus of the present molding composition and the maximum extractables amount of not more than 2% by weight of a molded product, which parameters are also not taught or suggested by Yu. Accordingly, the combined patents do not suggest the invention as claimed and withdrawal of the rejection is respectfully requested.

Claims 17 and 18 stand rejected based on 35 U.S.C. §103(a) as obvious over Douchet et al U.S. Patent 5,472,754 in view of Yu, U.S. Patent 5,256,460. This ground of rejection is respectfully traversed.

The disclosure of Douchet et al is fundamentally different from the embodiments of the present invention of Claims 17 and 18, because Douchet et al does not show or suggest a molding composition prepared from plural polymer components, but rather teaches, and is limited to, laminated or layered structures of, (1) specifically, high density polyethylene, (2) a polyethylene, acrylic acid and/or maleic anhydride copolymer intervening adhesive layer, and (3) a polyamide layer. The patent expressly teaches that a high density polyethylene must be used, to the exclusion of other polymer materials including other polyethylene, in order that the specific effect of providing a layered structure which exhibits an excellent barrier to alcohol be realized. Such is not a disclosed objective by Yu! Moreover, the laminated structure of Douchet et al requires an intermediate or intervening adhesive layer of a specific constituency which is not taught or suggested by Yu and, in fact, is irrelevant to Yu, because Yu does not teach a laminated structure, but rather a molding composition. Finally, in order to complete the laminated structure of Douchet et al, a polyamide third layer is required, but, of course, as a layer, is completely outside the molding composition of Yu which specifically requires a

copolyamide prepared from ϵ -caprolactam in combination with one of three other specific monomer which can give a copolyamide. Clearly, Douchet et al is not properly combinable with Yu in obviating either the pipe of present Claim 18 or the method of manufacture of Claim 17, and withdrawal of the obviousness ground of rejection is respectfully requested.

Claims 14 and 16 stand rejected based on 35 U.S.C. §103(a) as obvious over Yu, U.S. Patent 5,256,460 Toyobo. This ground of rejection is respectfully traversed.


Applicants maintain their position as stated above with respect to the failure of Yu to suggest the molding composition as claimed in present Claim 14. Again, Yu requires the blending of two specific polymer ingredients, wherein the polyamide component is a specific material prepared by reacting ϵ -caprolactam with one of three other specific monomer materials or monomer combination which results in a composition which, when molded, gives a fuel resistant material. On the other hand, although Toyobo discloses a blend of polymer materials as a moldable composition, three polymer materials must be blended and not two, one of which can be a polyamide such as PA-6, but does not have to be this polymer. Moreover, in teaching PA-6 as a polyamide, there is no teaching or suggestion of the specific copolyamide required by Yu in his composition of ϵ -caprolactam copolymerized with one of three monomers or combination of monomers to result in a copolyamide which yields molded products having the properties stated in the patent. This fact is critical because it is not evident how the teaching of Toyobo of PA-6 homopolymer would allow a combination with Yu with respect to the teachings of the two references on polyamide ingredients. In other words, the fact that Toyobo teaches PA-6 homopolymer does not in any way teach that such is equivalent to the copolyamide component (a) of Yu. Moreover, Toyobo requires the presence of two types of polyolefin material, one of which is polyethylene *per se*, while the other is ethylene-propylene rubber modified with maleic

acid, while Yu only requires the presence of a modified polyolefin. Clearly, because the two compositions are quite different, it is certainly not clear on what basis the skilled artisan to combine the teachings of the two documents to arrive at the present invention. Clearly, neither reference teaches the selective use of one of the five polyamides of component (I) of present Claim 14 and its possible combination of a flexible polymer while resulting in a composition having the tensile modulus recited in Claim 14 and the extractables limit recited in the claim. Accordingly, Claim 14 is believed distinguished over the combined references, and therefore Claim 16 also which depends on Claim 14. Withdrawal of the rejection is respectfully requested.

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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MARKED-UP COPY OF AMENDMENT UNDER 37 C.F.R. §1.116

IN THE CLAIMS

Please cancel Claim 1.

and amend Claims 2, 4, 5, 8-12, 15 and 17 as follows:

Claim 2, line 1, delete "1" and insert --18--.

Claim 4, line 1, delete "1" and insert --18--.

Claim 5, line 1, delete "1" and insert --18--.

Claim 8, line 1, delete "1" and insert --18--.

Claim 9, line 1, delete "1" and insert --18--.

Claim 10, line 1, delete "1" and insert --18--.

Claim 11, line 1, delete "1" and insert --18--.

Claim 12, line 1, delete "1" and insert --18--.

Claim 15, line 1, delete "12" and insert --14--.

Please amend Claim 17 as follows:

--17. (Amended) A method of manufacturing screen wash systems and head lamp wash systems of motor vehicles, comprising:

fabricating the pipe components of said screen wash systems and head lamp wash systems from the pipe of Claim [1] 18.--